DOCUMENT RESUME

ED 435 790 CE 079 048

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TITLE The Comparative Study of the Occupational Stress among Jobs and Bio-Peedback Training Effects in Iran.
PUB DATE 1999-06-22
NOTE 12p.; Paper presented at the International Symposium on Neurobehavioral Methods and Effects in Occupational and Environmental Health (7th, Stockholm, Sweden, June 20-23, 1999).
PUB TYPE Reports - Research (143) -- Speeches/Meeting Papers (150)
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Adjustment (to Environment); Adult Education; Behavior Modification; *Biofeedback; Comparative Analysis; Foreign Countries; Job Satisfaction; Occupations; Pretests Posttests; Program Effectiveness; *Relaxation Training; *Stress Management; *Stress Variables; *Work Environment
IDENTIFIERS *Iran; *Job Stress; Training Effectiveness

ABSTRACT

The effectiveness of biofeedback and relaxation training in reducing occupational stress was examined in a study of 50 individuals employed in various occupations in Iran. The study sample consisted of 15 workers (5 females, 10 males); 15 managers (5 females, 10 males); 9 guardians (3 females, 6 males); 5 dentists (2 females, 3 males); and 6 teachers (3 females, 3 males). All subjects were trained to control their occupational stress through relaxation and biofeedback techniques. Each of the 10 training sessions lasted 30 minutes. After the training sessions had been completed, the subjects were asked to continue training in their own work environment. All subjects were evaluated by the following methods before and after the training: clinical interviews; Minnesota Satisfaction Questionnaire, short form; and C-TEMP and GSR (Galvanic Skin Response) biofeedback. A chi-square analysis of the interview, questionnaire, and biofeedback findings failed to establish any relationship between sex of subject and effectiveness of treatment. However, effectiveness of training was significantly related to occupation. Specifically, the biofeedback and relaxation training was more effective in reducing the occupational stress experienced by dentists, teachers, and managers than it was in reducing the occupational stress experienced by guardians and workers. (Contains 27 references.) (MN)

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7th International Symposium on Neurobehavioral Methods and Effects in Occupational and Environmental Health Stockholm, June 20-23 1999.

Other agents, stress Oral 22/June 13/30 PM

ED 435 790

The comparative study of the occupational stress among jobs and Bio-feedback training effects in Iran

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ABSTRACT

Introduction and objective Due to the important of reducing occupational stress ,specially after war in Iran, This study has examined the effectiveness of **Bio-feedback (TEMP,GSR)** training in the treatment of fifteen patients (N=50,age range= 0 through 34) with occupational stress.
Material and Method Fifty patients of a clinical office through three months were diagnosed as suffering from major cause of occupational stress. A few of occupational stress are as follows: 1-daily physical and mental demands ,2- heart rate , 3-professional isolation , 4-difficulty decision making and 5-perceived lack of social status . At first of treatment programs , All of the patients were diagnose by: A- clinical interview (self direct questioner) B- job satisfaction inventory (**Minnesota satisfaction questionnaire,short form**) and finally C- **TEMP and GSR Bio-feed back**. Number of Ss At the begin of the study were as follows : 1-fifteen workers, (5 females and 10 males), 2- 15 managers (5 female ,10 males) 3- 9 guardians (3 female ,6 male)4- five dentists (2 females ,3 males) and 5- six teachers (3 females ,3 males) . The subjects were traine equally to control theirs occupational stress by relaxation and Bio-feedback training through ten 30 minutes' sessions. After training, the subjects were asked to continue training in theirs work environment . Then , After three months of training , the subject were evaluate by **Bio-feedback (GSR and TEMP)** , job satisfaction inventory (Minnesota university inventory) and clinical interview .

RESULTS Data were analyzed by chi-square's statistics with the following results.1-There are no relationship between sex and treatment . 2-There are significant relationship between job and treatment
CONCLUSION This study comprise as well as few studies in stress control and **Bio-feedback** training literature's, show that training of this method reduces the stress of jobs and it provides increasing of job satisfactions.

Introduction The economic change is increasing by economic activities in developing countries. In these countries, the economic development is one of the most important

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characteristic . At this reason , acquire and retained of organic & mental health and environment of workers is the main cause of economic development .According to A meta analyze in literature of this article , the aim of this study is too discused , **Bio-feed back** training effect to decreasing of occupational stress in iranian workers . Thous , Attending to literature, the propose of this article " is study of occupational stress and Bio feedback training affect between iranian jobs" that , would be discuses continuously by 6 rationales.

1-Developing Countries Workers and Their function A- manathan-chathapurram-s .This research reflects an inverse relationship between increased economic activity and the health and safety of workers in ASIA .According to this research low of decision making , poor use of job skills and lack of social support , are treats of occupational stress in worker (1994) B- Hoyle,Eric .Mc Mahon,Agner(1986) . Discussed separately, few aspects of mental --organic distinctions in developing countries' workers. In base of this research, the occupational stress is associate by organic and mental dysfunction's . For example , decreasing the job satisfaction , poor of handling difficult situation's ability , daily physical and mental demands difficult decision making.

2- Job and occupational stress A- Powers,Cathrine A.(1996). B-Borg,Mark G. Riding, Richard J (1993) .C- Blix,Arlene Gray. Lee, Jerry W (1991) D-Beehr,Terry A. And other (1990).E- Lam , Y. L. Jack,(1984). Discussed separately the job as a related variable to the occupational stress of workers , these studies clear the job and kind of job is an important factor in workers occupational stress . for example Powers,Cathrine a (1996) Was diagnosed to address the declining morale and the elevated job-related stress among the staff of a multiproblem human service agency.The paticipants were over 90 youth counselors and supervisors

3-characteristic of job and occupational stress A- Blix,Arlene Gary, and other (1994) . B-Pullis, Michael(1992) .C- Beehr, Terry A. And other (1991) D- Maracco,John C And other (1984) .E- Lam, Y. L, Jack (1984) F- Barton, Paul T. Hoover, Elizabeth (1987) .G-Borg,Mark G, Riding, Richard J (1993). Clear separately the kind of jobs(and certainly its environment) is related to occupational stress & organic and mental demands of workers. At this reason in this research the variables of occupational stress are organize as follows:

1 Poor coping ability,

2 Work load,

3 Increasing strain, and 4- Perception of social support . Were more important Factors that Related to occupational stress of worker's environment those Authors are discused it separately.

Personality and self-esteem of workers that were engage in few studies , 1- Rayburn,Carole A. And Others (1986) .2- Cummins, Robert C (1990) , discused separately personality as an Another related variables to occipital stress.

The Fourth category of occupational stress studies ,were relate to comparative studies .

4- The important of comparative studies in occupational stress and its treatment A-Smith, Earl. Witt,Stephanie L (1993) .B- Gaziel,Haim Hs (1993) studies, clear the

race and nation as an original factors that related to occupational stress of workers **A-** Smith, Earl . witt, Stephanie L (1993) , from analysis of data from a national survey of about 1000 college faculty reported African - American faculty reported higher levels of occupational stress than white counterpart **B-** Gaziel,H H (1993) Discused , Among 373 Jewish and Arab elementary teachers ,Jewish teacher reported higher occupational stress about community and parental expectations whereas Arab teachers were stressed by working conditions and professional image . The two groups also differed in handling difficult situations' strategies for managing job stress . Psychological intervention in occupational stress treatment , is The fourth factor in this literature.

5-Bio feedback training affect and occupational stress **A-** Wickramasekera, Ian and et all (1996) **B-** Arnette, J. Kenneth (1996) **C-** King,Theodore I (1992) **D-** Litchfield-n-Bruce (1989), discussed separately the important and sufficient effects of **Bio feedback** method in decreasing of occupational Stress. **GSR**(Galvanic Skin Response)method by: Clariana, Roy B (1992) , **2-** hypnoses, and Bio-psycho social model by: Wickramasekera, - Ian and et all (1996) and **3-** . Counseling and psychotherapy model by: Arnette - J-Kenneth (1996). Discused as an another psychotherapy method , the conclusions of this study , clear significant difference in psychotherapy and Neuron-psychotherapy models in treatment of stress and occupational stress related to workers .

6- multi intervention of psychotherapy to decreasing occupational stress

According to the few of researches , multi interventions of psychotherapy models make more sufficient in decreasing of OS . **A-** Wickramasekera ,- Ian and et all (1996) hipnose, cognitive and behavior therapy are sufficient method to control of occupational stress and **B-** Arnette ,-J-Kenneth (1996) discused , counseling , psychotherapy and drug therapy are significant method to decreasing of occupational stress .

METHODS

Subjects

The definition of persons with occupational stress (**O. S**) is applied to workers were suffering from organic and mental stress in environment of work status . These definition was drafted and endorsed by the DSM-IV (1996) characteristic for stress disorders and few of research, discussed the main characteristic of occupational stress **(OS)** disorders include as follows : 1- high frequency of daily physical and mental demands like , biting heart , headache , low of job Satisfaction , professional isolation , difficult decision making , and lack of social status (Lichfield-n-Burce ,1989) . 2- less able to cope effectively , (Hamilton , Linda H. Kella , John J ,1992) 3- low of job satisfaction , A-(Powers , Catherine A ,1996) and B- (Borg, Mark G . Riding,Richard J,1993) , 4- job change, (Blix, Arlene Gray , and other ,1994) .

In a clinical office the 50 patients were participate to psychotherapical intervention voluntary . After clinical interview, Organic- mental needs Self direct Questioner and **MINNESOTA job satisfaction questionnaire, short form A-(** Stickel,sue A , 1991) B-(Taylor, Elizabeth A and other 1990) , the patients were voluntarily participated to **relaxation** and **Biofeedback** training models, through 10, thirty minute sessions.

The subjects were as follows:

Fifteen workers, (5 females and 10 males), 15 managers (5 females ,10 males) 9 guardians (3 female ,6 male) five dentist (2 females ,3 males) and six teachers (3

females ,3 males) .At first all the subjects were trained as equally to control their occupational stress by relaxation and **Bio-feedback** training through ten,30 minutes' sessions of training in self control of O-S .

TABLE NUMBER 1-*FREQUENCY OF PATIENTS BY SEX AND JOB CLASS.*

CLASS	JOB	FEMALE	MALE	TOTAL
A	DENTISTS	2	3	5
B	GUARDIANS	3	6	9
C	MANAGER	5	10	15
D	TEACHERS	3	3	6
E	WORKER	5	10	15

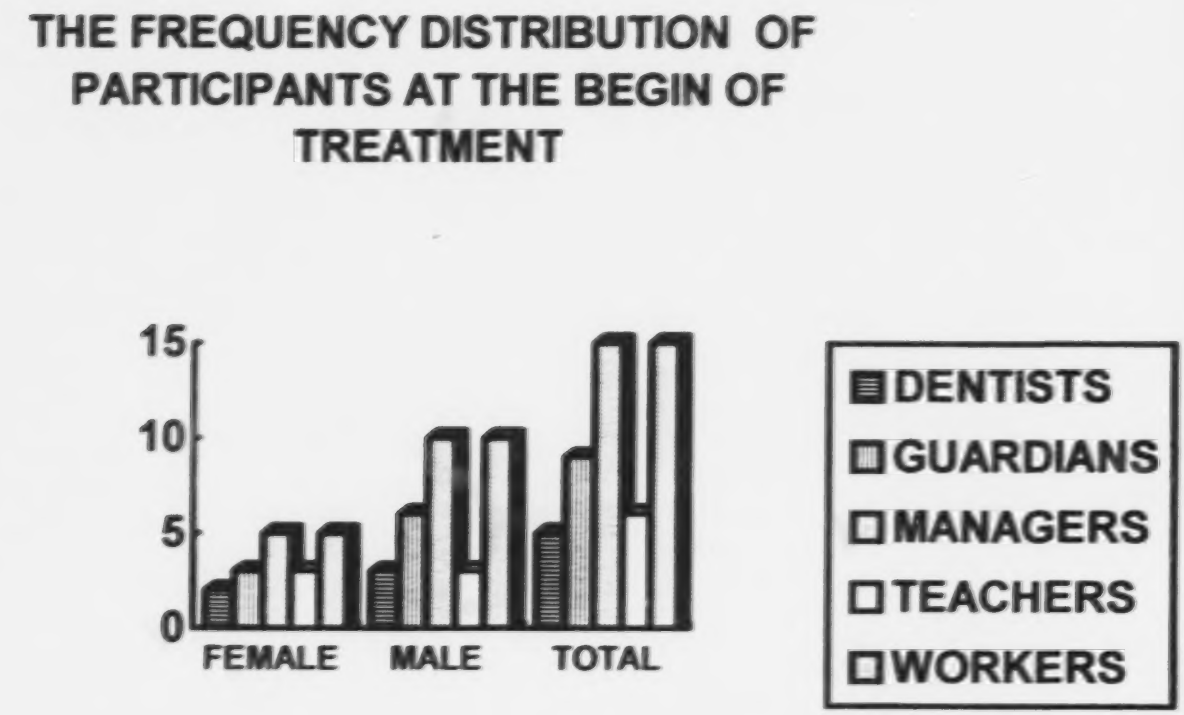

Figure 1 THE FREQUENCY DISTRIBUTION OF PARTICIPANTS AT THE BEGINING STAGE OF TREATMENT

MATERIALS

The research materials include 1- the inventory of **MINNESOTA JOB SATISFACTION INVENTORY (MJSI)** 2-the clinical interview 3- questionnaire of psychological and organic needs (self- directed) and 4- Bio- feedback instrument (Galvanic Skin response or **GSR)** and temperature of skin response **(T S R)**

METHOD

At first , All the 50 patients were asked to participate to complete these programs : 1- complete the **(MJSI)** 2- **OS self-** directed questionnaire , and 3- the **biofeedback** training control , through ten, thirty minutes' sessions. Finally 4- , subjects were asked to continue the **Os** control program (occupational stress control) in their work environment ,(through three months of follow-up study). Approximately three months later of flow up study , subjects were asked to estimate their **OS** and occupational stress for second time , by complete the 1- questionnaires 2- **Biofeedback** scales testing. And finally 3- **MJSI**.

RESULTS

The result's bases on 80% (N= 40) of subjects that participate to all the programs , engage there are not significant relationship between treatment and sex , bout there are significant relationship between jobs and treatment . Finally ,these results Suggest psychotherapy intervention in treatment of , Dentist , managers and teachers **OS** is more sufficient versus other jobs .

TABLE 2 ***THE FREQUENCY OF PATIENTS BY SEX AND JOB CLASS. IN ALL OF THE STAGES OF TREATMENTS PROGRAM.***

CLASS	JOB	FEMALE	MALE	TOTAL
A	DENTISTS	2	2	4
B	GUARDIANS	2	4	6
C	MANAGER	4	8	12
D	TEACHERS	3	3	6
E	WORKER	4	8	12
total		15	25	40

GRAPH NO 2 :THE FREQUENCY OF PARTICIPANTS BY SEX AT THE THREE MONTH STAGE OF TREATMENT

THE FREQUENCY DISTRIBUTION OF PARTICIPANTS AT THE THREE MONTHS STAGE OF TREATMENT

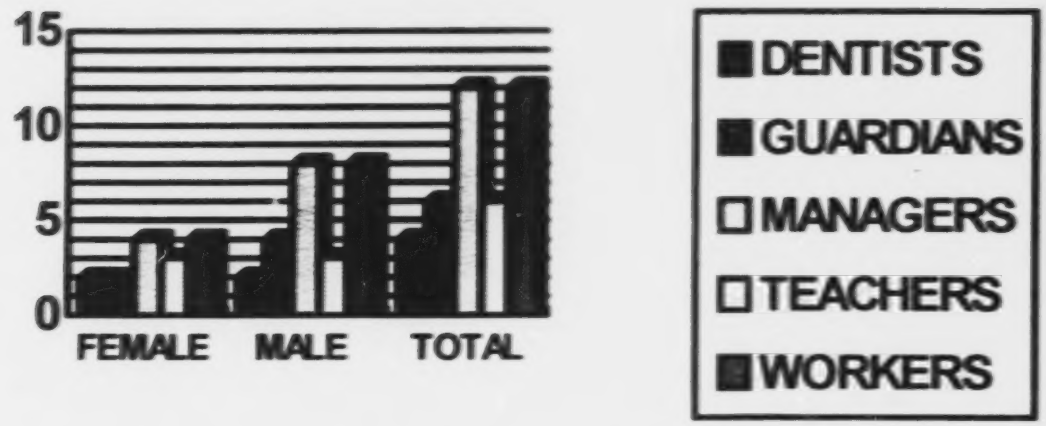

Figure 2 THE FREQUENCY DISTRIBUTION OF PARTICIPANTS AT THE THREE MONTH STAGE OF RESEARCH

This table and graph show number of Ss that are success to control their OS by psychotherapeutic model .

TABLE 3 FREQUENCY OF PATIENTS BY SEX AND JOB CLASS AT THE END STAGE OF TREATMENT.

CLASS	JOB	FEMALE	MALE	TOTAL
A	DENTISTS	2	2	4
B	GUARDIANS	1	3	4
C	MANAGER	4	6	10
D	TEACHERS	3	2	5
E	WORKER	3	2	5
total		13	15	28

THE FREQUENCY DISTRIBUTION OF PARTICIPANTS AT THE FINAL STAGE OF TREATMENT

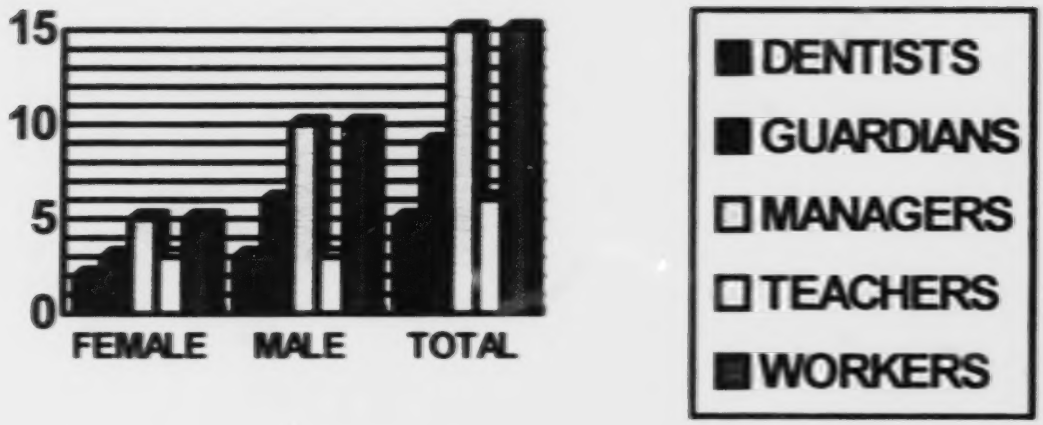

Figure 3 THE FREQUENCY DISTRIBUTION OF PARTICIPANTS AT THE FINAL STAGE OF TREATMENT

CHI-SQUARE Tests according to job and treatment variables clear significant relationship between job and treatment variables (Chi-Square = 9.20 D.F= 4 significace level = .05)

finally , results from Chi-Square method suggest, there are not significant relationship between variable of sex and treatment variable (Chi-Square = 4.00 D.F =4 significance level = .406)

TABLE 4 SHOW CHI SQUARE RESULTS ATTEND TO JOB , SEX AND TREATMENT VARIABLES

ÿ1- **Sex** And **Treatment** Variables Comparison Chi Square 4.00 D. F = 4
significance= .406

2- **Job** And **treatment** Variables Comparison- Chi Square=9.20 D.F= 4
Significance=.05*

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* significance level= 95%

DISCUSSION

Final review of this article is engaged in the discussion the data of this research . According to these data , the discussion , attempt to find rational elements of research conclusion . In this way , Authors discuss three elements that is relate to these data 1- cause and effect of conclusion 2- Limitation (s) of research And finally 3- suggestion of research . 1- Cause and Effects of conclusions :

In this way , data clear A: There are Significant relationship between jobs and treatment variables (Table Number 3 and its Graph And Table number 4) and B: There are Not significant relationship between variable of sex and treatment (Table Number 3 and its Graph and Table number 4) .According to these data , job's variable as independent variable is suffering from OS and in the other hand treatment method is an independent variable to job variable . Table number 1 and Graph number 1 , discus frequency of patient that are suffering from OS , in this table frequency of patients ,report Dentists , Guardians , Manager , Teachers , Workers jobs associate by indisputable stress and over loading of work
For example in this study dentist , teacher and management jobs report more significant effect from psychotherapy method intervention . In the other way , all the subjects attend to organic-mental need Questioner reports , Work load, increasing strain and social support were the main factor of there Occupational stress (O S) . Work load (69%) social

support (55%) and increasing strain(80%) .

Table number 2 and Graph number 2, report Frequency of patients that are participates to the treatment's program .In comparison of Table N -1 - results show , decreasing of subject too 80% , was affect from 1- prolongs of treatments program 2- work loading in their environment and 3- some personal limitations (time, Price ,Interest and etc.) . The table number 3 and its Graph (3) , reports final frequency of patients that were participated to treatments program , according to collecting of data from the Questioners, clinical interview and Bio-Feed Back Scales , 61% (28\ 40)of the patients were suggest to acquire these traits: 1- control there Occupational stress 2- Increased Job satisfaction 3-low of Organic-Mental needs (Table NO 3 and Graph NO 3 show the frequencies of patients that they are treated by psychological intervention).

2- Limitation (s) of research : Have a One group of clinical population in this study is one of the main limitation of research another of these limitations is the control group of research that was renouncement .

3-Suggestion of research : It is suggest to develope, this model to another job and population . and second , search to find another elements and reinforces related to OS in our social statistic , for example, search to find work loading and social support study related to jobs between success groups (teachers, dentists and managers) and other groups (worker ,Guardians)

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